

AMENDMENTS TO THE CLAIMS:

1-44. (Cancelled)

45. (Previously Presented) A production apparatus for producing a crystal, said apparatus comprising:

a crucible divided into a plurality of stages, each stage containing a crystal precursor material; and

a heater arranged to heat said crucible,

wherein each stage of said plurality of stages of said crucible has formed therein a degassing hole in a side wall portion thereof for discharging an impurity gas produced when refining the crystal precursor material by adding a scavenger thereto, and

wherein a lower portion of a first stage of the plurality of stages is positioned to cover an upper edge of a wall portion of a second stage of the plurality of stages, an inner height of each stage of said plurality of stages is 10mm to 50mm, the degassing hole has a diameter of 1 mm to 5 mm, and a fluoride crystal is formed from the precursor material.

46. (Previously Presented) A production apparatus according to Claim 45, wherein the plurality of stages is used in a sequential manner.

47. (Previously Presented) A production apparatus according to Claim 45, wherein each stage of said plurality of stages of said crucible has formed therein at least two degassing holes

in the wall portion thereof.

48. (Cancelled)

49. (Previously Presented) A production apparatus according to Claim 45, wherein each stage of said plurality of stages of said crucible has formed therein a connecting hole at a bottom center portion thereof.

50. (Previously Presented) A production apparatus according to Claim 45, wherein said crucible has a cylindrical shape.

51. (Previously Presented) A production apparatus according to Claim 45, wherein said crucible has an inner diameter of at least 250 mm.

52. (Previously Presented) A production apparatus according to Claim 45, wherein said crucible has a region for mounting a material.

53. (Previously Presented) A production apparatus according to Claim 45, comprising:

a region for receiving a material, said region formed by superimposing a plurality of crucibles; and

wherein the crucible has no connecting hole at the lowermost stage.

54. (Cancelled)

55. (Previously Presented) A production apparatus according to Claim 59, wherein said crucible has formed therein at least two degassing holes in the side wall portion thereof.

56. (Previously Presented) A production apparatus according to Claim 59, wherein said crucible has a cylindrical shape.

57. (Previously Presented) A production apparatus according to Claim 59, wherein said crucible has an inner diameter of at least 250 mm.

58. (Previously Presented) A production apparatus according to Claim 59, wherein said degassing hole has a diameter of 1 to 5 mm.

59. (Previously Presented) A production apparatus for producing a crystal, said apparatus comprising:

a crucible containing a crystal precursor material; and

a heater arranged to heat said crucible,

wherein said crucible is divided into a plurality of stages and each of said

plurality of stages of said crucible has formed therein a degassing hole in a side wall portion thereof for discharging an impurity gas produced when refining the crystal precursor material by adding a scavenger thereto, and

wherein a fluoride crystal is formed from the crystal precursor material.

60-74. (Cancelled)

75. (Previously Presented) A production apparatus according to Claim 59, wherein said crystal comprises calcium fluoride and said scavenger comprises at least one of cadmium fluoride, lead fluoride, zinc fluoride, bismuth fluoride, sodium fluoride and lithium fluoride.

76. (New) A crystal production method for producing a crystal using the production apparatus according to Claim 59.

77. (New) A crystal production method according to Claim 76, wherein the crystal is used as an optical element.